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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/817,538

04/02/2004

Michael I. Jones

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08/09/2006

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EXAMINER

PHAM, HOA Q

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/817,538

Applicant(s)JONES, MICHAEL I. **Examiner**

Hoa Q. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12, 15-19 and 22-27 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 13, 14, 20, 21 and 28-30 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings filed on 4/2/04 have been accepted.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 7-12, 15-19, 22-23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCrickered et al (3,723,010) in view of Kitaya et al (4,647,197).

Regarding claims 1, 3, 10-12, 15-16 and 25-27, McCrickered et al discloses a holographic method and apparatus for checking the optical characteristics of transparent members such as aircraft windscreens and automobile windshields comprises a light source (11) to generate a beam of light (14); a collimator (18), optically coupled to the light source to collimate the beam of light; a plurality of subapertures (25) to pattern the collimated beam of light; an imaging screen (32) that receives the beam of light and produces patterned collimated and records images of the patterned on a single hologram (32b) and the optical distortion of the transparent members is determined in the basis of comparison between the undistorted image of the reference member and distorted image of the test member (figures 1, 2a, 5; column 2, lines 48-68; column 3,

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lines 52 through column 4, line 18). McCrickered et al does not explicitly teach the use of computer system in which both undistorted image and distorted image are stored in a memory and a processing unit operable compare the distorted image to the undistorted image and determine the optical distortions caused by the transparent member; however, such the features are known in the art as taught by Kitaya et al. Kitaya et al, from the same field of endeavor, discloses a distortion inspection apparatus of a glass plate in which the distorted image and reference undistorted image are stored in a memory (21) and compared by the use of a processor (16) (see abstract and figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the comparison unit of McCrickered et al by a computer unit of Kitaya et al for the same purpose of comparison between a reference image and test image. The rationale for this modification would have arisen from the fact that using a computer unit taught by Kitaya et al would increase the accuracy of the inspection system.

Regarding claims 2 and 17-18, figure 1 of McCrickered et al shows that the light source (11) is located outside of the aircraft canopy.

Regarding claims 4 and 19, it would have been obvious to one having ordinary skill in the art at the time the invention was made to place the light source within the aircraft canopy and the imaging screen outside the aircraft canopy since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Regarding claims 7 and 22, to ensure all of the light beams is received by the 3-D PEV within the aircraft canopy, it would have been obvious to provide the width of the collimated beam exceed the width of the 3-D PEV.

Regarding claims 8 and 23, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the laser source of McCrickered et al by a white light source and a filter in front of the light source if a certain wavelength(s) is/are selected.

4. Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCrickered et al and Kitaya et al as applied to claims 1 and 16 above, and further in view of Smith (7,038,791).

Regarding claims 9 and 24, both McCrickered et al and Kitaya et al do not explicitly teach that the array of small subapertures comprises a Hartmann mask; however, such a feature is known in the art as taught by Smith. Smith teaches that the Hartmann wavefront sensor uses an array of lenslets (18) or a mask pierced with holes for dividing the distorted wavefront into an array of subapertures (column 1, lines 50-54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the plate (27) of McCrickered et al by a Hartmann mask taught by Smith because they are function in the same manner.

Allowable Subject Matter

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5. Claims 5, 6, 13, 14, 20, 21 and 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Following references relate to optical distortion measurement system: Cohen et al (5,343,288), Ladewski (6,208,412), Louisnathan (5,812,260), Hoffman (5,621,520), Tani (5,471,297), Merkel et al (H999), Task (4,299,482), Task et al (4,461,570), Voggenthaler (3,912,395) and Genco et al (4,310,242).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hoa Q. Pham
Primary Examiner
Art Unit 2877

HP
August 6, 2006